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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/601,790	09/05/2000	Angela Speith-Herfurth	6001-0106	2181

29381 7590 11/20/2002

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EXAMINER	
JACKSON, MONIQUE R	

ART UNIT	PAPER NUMBER
1773	8

DATE MAILED: 11/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/601,790	Applicant(s) SPEITH-HERFURTH ET AL.	
	Examiner Monique R Jackson	Art Unit 1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 August 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17 and 20-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17 and 20-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. The amendment filed 8/27/02 has been entered. Claims 18 and 19 have been canceled. New claims 20-32 have been added. Claims 1-17 and 20-32 are pending in the application.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

3. Claims 1, 3, 9, 10, 12-14, 16, 20-25, and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Chu et al (USPN 6,159,612.) Chu et al teach a biaxially oriented multilayer film comprising a barrier layer comprising syndiotactic polypropylene and moisture and oxygen permeability reducing amounts of wax wherein the barrier layer may be the core of the multilayer film with outer layers formed from materials such as ethylene propylene copolymer which is a heat sealable material (Abstract; Col. 2, line 46-Col. 3, line 27; Col. 6, lines 4-12.) The wax is preferably a hydrocarbon wax such as polyethylene wax, having a molecular weight between 300 and 800 with waxes including paraffin waxes, microcrystalline waxes and intermediate waxes (Col. 2, line 46-60.) Chu et al teach that to further improve certain properties of the multilayer film, one or more of the layers may contain additives such as low molecular weight resins as described in U.S. Pat. No. 5,254,394, incorporated by reference, which teaches low molecular weight hydrocarbon resins having a softening point of 60 to 180°C, preferably 80 to 130°C, including petroleum resins, styrene resins, cyclopentadiene resins and terpene resins that would inherently have a molecular weight as instantly claimed.

Claim Rejections - 35 USC § 103

4. Claims 1-17 and 20-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murschall et al in view of Yeh et al (USPN 5,155,160) or WO 96/27491 (WO'491) for the reasons recited in the prior office action and restated below.

5. Murschall et al teach a biaxially oriented polyolefin packaging film which is heat-sealable on both sides and has a base layer essentially comprising propylene polymer, preferably isotactic polypropylene having an n-heptane soluble content of 6% by weight or less, such as 4.5% as in the examples, which has been peroxidically degraded by a factor of about 3 to about 10; and two outer heat-sealable layers of ethylene-propylene copolymer which has also been peroxidically degraded by a factor of about 3 to 15; and wherein both the base and the two outer layers may contain appropriate additives in an effective amount including antistatic agents such as a tertiary aliphatic amine or polydialkylsiloxanes; antiblocking agents such as silicon dioxide; lubricants such as waxes or polydialkylsiloxanes in an effective amount of 0.1 to 2.5% by weight; neutralizers; stabilizers; and/or low-molecular weight resins such as hydrocarbon resins, styrene resins, or cyclopentadiene resins with a number average molecular weight of 200 to 1000 in a preferred amount of 3 to 15wt%; as well as others in amounts as listed in Col. 4 (Abstract; Col. 2, lines 10-15; Col. 4, line 16-Col. 5, line 2; Col. 6, lines 24-30; Examples.) The thickness of the film may vary within broad limits and depends, in particular, on the intended use, with the overall thickness preferably from 10 to 50μm with the base layer comprising 50 to 90% of the film (Col. 5, lines 3-10.) Murschall et al teach that the film is preferably stretched from 4 to 7:1 in the longitudinal direction and from 8 to 10:1 in the transverse direction (Col. 5, lines 21-39.)

Murschall et al teach that the polyolefin films have extremely low haze and very good gloss and hence are suitable as a cigarette packaging film (Col. 6, lines 3-9.)

6. Though Murschall et al teach that the base may contain a wax as well as a hydrocarbon resin with a molecular weight of 200 to 1000, Murschall et al does not specifically limit the hydrocarbon resin and the wax to those having a molecular weight as instantly claimed. However, it would have been obvious to one having ordinary skill in the art at the time of the invention to utilize any low-molecular weight resin within the disclosed range taught by Murschall et al and to further utilize any conventional lubricant or wax, wherein polyethylene wax and paraffin wax, microcrystalline or macrocrystalline, are obvious species of waxes utilized in the art as evidenced by Yeh et al or WO'491. Further, given that molecular weight is a result-effective variable affecting the softening point of the additive as taught by Murschall et al, which in turn affects the film properties, it would have been obvious to one having ordinary skill in the art at the time of the invention to utilize routine experimentation to determine the optimum molecular weight and molecular weight distribution of the resin or wax additive to provide the desired film properties for a particular end use. Additionally, Yeh et al teach that improved barrier properties are obtained by incorporating about 3 to 10 percent by weight of a wax having a molecular weight between 300 and 800 in the polypropylene core layer wherein the molecular weight distribution of the wax is a result-effective variable (Col. 1, line 66 – Col. 2, line 42.) WO'491 also teach that improved barrier properties are provided by incorporation of a wax in the core layer in an amount from 0.25 to 15% by weight, with a molecular weight of from 300 to 1000. Hence, it would have been obvious to one having ordinary skill in the art to utilize a wax as taught by Yeh et al or WO'491 in amount as instantly claimed to provide

improved barrier properties to the packaging film taught by Murschall et al. With regards to Claims 2 and 3, though Murschall et al teach a base layer comprising isotactic polypropylene which is peroxidically degraded by a factor of about 3 to 15, Murschall et al does not specifically teach an isotactic index of at least 95% or a Mw/Mn, which is a result of degradation, of 1 to 10 as instantly claimed. However, isotacticity and molecular weight distribution are known result-effective variable affecting the mechanical and melting properties of the polypropylene in the film and hence it would have been obvious to one having ordinary skill in the art at the time limit the invention to utilize routine experimentation to determine the optimum isotacticity index of the polypropylene base and the optimum degradation factor, in turn Mw/Mn, to provide the desired film properties for a particular end use. With regards to Claim 12, though Murschall et al teach that the film may be utilized to produce laminates comprising other plastic films or layers (Col. 5, lines 59-67), Murschall et al do not teach the use of an interlayer between the core and one or both outer heat-sealable layers, however it is well known and conventional in the art to utilize tie or intermediate layers between adjacent layers to provide improved adhesion between layers or to utilize additional layers to provide the desired thickness or barrier properties for a particular packaging application.

7. Claims 1-17 and 20-32 are rejected under U.S.C. 103(a) as being unpatentable over Peiffer et al in view of Yeh et al (USPN 5,155,160) or WO 96/27491 (WO'491) for the reasons recited in the prior office action and restated below.

8. Peiffer et al teach a biaxially oriented polyolefin film with a preferred embodiment comprising a core layer comprising isotactic polypropylene having a chain isotacticity of preferably 90 to 98% and a cycloolefin polymer additive (*equivalent to instantly claimed "wax"*)

having a preferred Mw of 500 to 5,000 and a Mw/Mn from 1 to 5, preferably 1.5 to 4; and an outer heat sealable layer on one or both sides such as formed from polyolefin resin, and if desired, interlayers on one or both sides; wherein the isotactic polypropylene has a molecular weight distribution Mw/Mn of from 2 to 15, preferably from 2 to 6, achieved, for example, by peroxidic degradation in a factor of 3 to 15, preferably 6 to 10 (Abstract; Col. 3, lines 7-19; Col. 4, lines 14-26; Col. 4, line 45-Col. 5, line 32; Col. 6, lines 58-67; Col. 7, lines 1-42 and lines 61-62; Col. 8, lines 9-10.) Peiffer et al teach that the outer or other layers are preferably propylene polymers wherein the propylene polymers of the other layers are partially degraded by addition of organic peroxides to a degradation factor of from 3 to 15, preferably 6 to 10 (Col. 7, lines 16-17; Col. 7, line 64-Col. 8, line 10.) Peiffer et al teach that the base, interlayer(s), and/or outer layer(s) can contain additive in effective amounts in each case, such as low-molecular-weight hydrocarbon resins like cyclopentadiene resins in an amount of 1 to 30% by weight, preferably 2 to 30% by weight, and/or lubricants like waxes and polydimethyl-siloxanes in an amount of 0.1 to 3% by weight and/or stabilizers and/or neutralizers and/or antistatics like aliphatic tertiary amines and/or antiblocking agents like silicon dioxide; wherein the low-molecular weight hydrocarbon resins have a Mw of 300 to 8,000, preferably 400 to 5,000, particularly 500 to 2,000 (Col. 8, line 35 - Col. 9, lines 55.) The total thickness of the film is preferably from 4 to 200μm, more preferably from 10 to 100μm, with the thickness of the base layer comprising at least 50% of the film (Col. 3, lines 24-26; Col. 8, lines 17-34.) Peiffer et al teach that the biaxial stretching of the film is preferably at a ratio of from 4:1 to 9:1 in the longitudinal direction and from 6:1 to 11:1 in the transverse direction (Col. 10, lines 3-14.)

9. Though Peiffer et al teach that the base layer can contain waxes as well as hydrocarbon resin with a molecular weight of 300 to 8,000, preferably 500 to 2,000, Peiffer et al do not specifically limit the hydrocarbon resin and the wax to those having a molecular weight as instantly claimed and particularly a polyethylene wax with a Mw/Mn from 1 to 2 or a macrocrystalline paraffin wax, having a molecular weight as instantly claimed, however, it would have been obvious to one having ordinary skill in the art at the time of the invention to utilize any conventional wax material, wherein polyethylene wax and paraffin wax, microcrystalline or macrocrystalline, are obvious species of wax utilized in the art as evidenced by Yeh et al or WO'491. Further, given that molecular weight is a result-effective variable affecting the softening point of the wax additive, it would have been obvious to one having ordinary skill in the art at the time of the invention to utilize routine experimentation to determine the optimum molecular weight and molecular weight distribution of the resin or wax additive to provide the desired film properties for a particular end use. Additionally, Yeh et al teach that improved barrier properties are obtained by incorporating about 3 to 10 percent by weight of a wax having a molecular weight between 300 and 800 in the polypropylene core layer wherein the molecular weight distribution of the wax is a result-effective variable (Col. 1, line 66 – Col. 2, line 42.) WO'491 also teach that improved barrier properties are provided by incorporation of a wax in the core layer in an amount from 0.25 to 15% by weight, with a molecular weight of from 300 to 1000. Hence, one having ordinary skill in the art would have been motivated to utilize a wax as taught by Yeh et al or WO'491 in amount as instantly claimed as the wax in the invention taught by Peiffer et al to provide improved barrier properties to the packaging film.

10. Claims 1, 3, 9, 10, 12-14, 16, 20-25, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chu et al in view of Peiffer et al or Murschall et al. The teachings of Chu et al are discussed above. Though Chu et al teach a propylene polymer core layer containing a wax within the instantly claimed ranges well as a hydrocarbon resin such as those instantly claimed, Chu et al does not specifically limit the hydrocarbon resin and the wax to those having a molecular weight as instantly claimed. However, it would have been obvious to one having ordinary skill in the art at the time of the invention to utilize any low-molecular weight resin conventionally utilized in the art, wherein Peiffer et al and Murschall et al both teach the use of hydrocarbon resins having a molecular weight within the instantly claimed range, and to utilize any wax within the range taught by Chu et al. Further, given that molecular weight is a result-effective variable affecting the softening point of the wax additive, it would have been obvious to one having ordinary skill in the art at the time of the invention to utilize routine experimentation to determine the optimum molecular weight and molecular weight distribution of the resin or wax additive to provide the desired film properties for a particular end use.

Response to Arguments

11. Applicant's arguments filed 8/27/02 have been considered but are not persuasive and/or moot in view of the new ground(s) of rejection. It is first noted that the Applicant initially appears to argue the references separately. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). It is further noted that Applicant appears to argue the combination of references in terms

of providing obviousness for combining the wax and the hydrocarbon resin, however, it is noted that the primary references relied upon by the Examiner teach the combination of a wax and a hydrocarbon resin. Hence, Applicant's alleged showing of unexpected results is not persuasive given that the primary references each teach the combination. Though the references do not specifically limit the wax and hydrocarbon resin to the molecular weights as instantly claimed, Applicant's arguments and showing of unexpected results are silent with regards to the molecular weight ranges of these two components. Therefore, the Examiner maintains her position with regards to obviousness as recited above but would reconsider her position upon of showing of unexpected results with regards to the instantly claimed molecular weight ranges.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique R Jackson whose telephone number is 703-308-0428. The examiner can normally be reached on Mondays-Thursdays, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul J Thibodeau can be reached on 703-308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Monique R. Jackson
Patent Examiner
Technology Center 1700
November 15, 2002